

88th Legislature: Priority Request

Increasing Texas A&M AgriLife Research capability: Infrastructure and graduate student support

TEXAS A&M
AGRI LIFE
RESEARCH

Objective

Texas A&M AgriLife Research requests support from the 88th Legislature to invest in infrastructure upgrades as well as the training of young scientists to better meet the needs of Texas' agricultural research priorities.

Background

Modernizing research facilities

AgriLife Research lab space and equipment are critical components of the agency's ability to serve the citizens of Texas. Top-notch research infrastructure ensures the state's economic competitiveness and excellence in agriculture, natural resources and life sciences.

Modernizing the research capabilities at our 13 research centers across Texas is critical to solving constant, varying challenges to agricultural and natural resources in our state. Our missions have outgrown their 60- to 70-year-old lab environments and require cutting-edge, specialized instrumentation and equipment.

Not only are upgraded laboratory space and equipment essential to new and continuing research, but they also help attract and retain top-quality scientists, whose advanced research requires modern facilities.

Preparing the next generation

Human capital is critical to AgriLife Research's ability to serve Texas.

The funding we request would allow Texas A&M University System graduate students to engage in research where it is taking place across the state. Funding would pay graduate student stipends to aid research at our 13 regional centers — developing students into the state's future research workforce.

\$15 million

To increase AgriLife Research capability and develop young scientists to meet the needs of Texas agriculture



Benefits to Texans

Accomplishments over the next two years

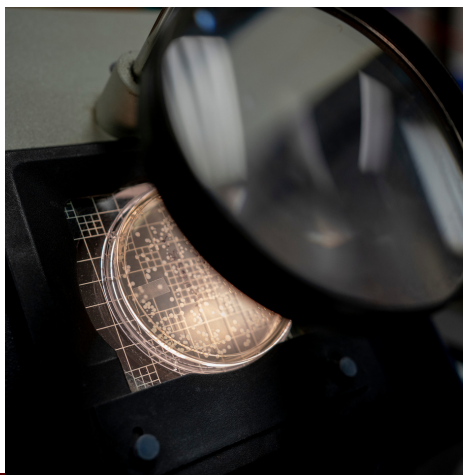
Texans and Texas agriculture will benefit from groundbreaking research that:

- > Advances the speed and degree of scientific discoveries in plant and animal systems.
- > Increases the state's competitive advantage in high-priority global initiatives like carbon capture, supply chain solutions and control of antimicrobial resistance.
- > Integrates graduate students and postdoctoral fellows in solving agricultural and natural resource problems, thus preparing the next generation of scientific research leaders.

STRENGTHEN TEXAS AGRICULTURE

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AgriLife Research scientists' priorities have expanded to include new economically and topically important research areas



Adapting to change

The ability of AgriLife Research to obtain external funding depends on state-of-the-art infrastructure.

Outdated equipment across AgriLife Research facilities, as old as 60-70 years, does not mirror modern agricultural practices or laboratory safety standards.

Moreover, modern analytical and scientific equipment is required to develop new solutions that position Texas agricultural producers to battle drought, disease and increased input costs.

New technologies can also help develop livestock that tolerate heat, resist disease and consume less water.

New, critical research areas for Texans

Research areas of growing importance to the state include animal and plant genomics; DNA or marker-assisted genetic selection; chemical and biological speciation of air, water and waste constituents; and viral diseases of plants and animals.

Examples: Upgrades and impacts

- Equipment such as high-throughput DNA sequencers would allow scientists to determine the genetic compositions of microbes, insects and plants, helping them to develop more efficient and resilient crop varieties.
- Mass spectrometers would be used in research relating to healthy compounds in foods. Chemical analysis enhanced by ion detectors would allow scientists to more accurately detect nutrients and pesticides in water.
- Retrofitting several labs around the state to Biosafety Level 2 standards would allow scientists to conduct experiments that require specific containment and precise measurements of chemicals and biological agents.
- Improvements in air handling and negative pressure space would allow for experiments relating to molecular recombinant DNA, aiding vaccine development, and new plant varieties that resist disease and improve soil fertility.

World-renowned research in each Texas region

Enhanced funding for the 13 regional AgriLife Research centers would create a geographically expansive research environment where scientists and graduate students access the best resources for conducting research unique to each center's geographic location.



Water conservation research in Dallas, citrus research in Weslaco, and cow and calf research in Overton are examples of critical, regional research areas that support Texas commodities.

At the same time, AgriLife Research scientists and laboratories are the public faces of Texas' agricultural and natural resources research.

Each should reflect the world-class, cutting-edge, life-changing impact of AgriLife Research.

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